

TNS075663

PJH



Tennessee Department of Environment and Conservation
Division of Water Pollution Control
 6th Floor Annex, L&C Tower, 401 Church Street, Nashville, Tennessee 37243
 1-888-891-8332 (TDEC)

Notice of Intent (NOI) of Coverage Under the Pesticide General Permit (PGP)

Submission of this completed NOI constitutes notice that the Operator identified in Section B intends to be authorized to discharge pollutants to waters of the state within the pest management area identified in Section C of the Pesticide General Permit (PGP). Submission of this NOI constitutes notice that the party identified in Section B of this form has read, understands, and meets the eligibility conditions of Part 1 of the permit; agrees to comply with all applicable terms and conditions of the permit; and understands that continued authorization under the permit is contingent on maintaining eligibility for coverage. To be granted coverage, all information required on this form must be completed. Please read and make sure you comply with all permit requirements, including the requirement for large entities to prepare a Pesticide Discharge Management Plan (PDMP) prior to NOI submittal. Refer to the instructions at the end of this form to complete your NOI.

A. Notice of Intent Status

1. Mark whether this is the first time you are requesting coverage under the PGP or if this is a change of information for a discharge already covered under the PGP. If this is a change of information, supply the NPDES permit tracking number for the discharge.

a. ☒ Original NOI Submission

b. ☐ NOI Change of Information: TNP (NPDES Permit Tracking Number)

Please note: When selecting A.1.b please fill out Section B (Operator Name and Mailing Address) and the fields of the NOI that need to be modified.

B. Operator Information

1. Operator Name: Shelby County Health Department

2. Operator Type (check one):

a. ☐ Federal government

b. ☐ State government

c. ☒ Local government

d. ☐ Mosquito control district (or similar)

e. ☐ Irrigation control district (or similar)

f. ☐ Weed control district (or similar)

g. ☐ Other: If other, provide brief description of type of operator: _____

3. Are you a large entity as defined in Appendix A of the permit? (check one):

☒ Yes ☐ No

Please note: If you answer "Yes" to this question you are required to develop a Pesticide Discharge Management Plan (PDMP) and submit an Annual Report reflecting all pesticide uses for which you are requesting permit coverage under this NOI.

4. Mailing Address:

a. Street: 814 Jefferson Ave.

b. City: Memphis c. State: TN d. ZIP Code: 38105

e. Telephone: 901 222 9079

f. Fax: 901 222 9049

g. Contact Name: Dr. Tyler Zerwekh

h. E-mail: tyler.zerwekh@shelbycountyttn.gov

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

C. Pest Management Areas: Complete Section C for each Pest Management Area for which coverage under Pesticide General Permit is desired.

Pest Management Area # ___ of ## ___

1. Pest Management Area Name: Shelby County

Provide a map of the location of the Pest Management Area (attach map) or describe the location of the Pest Management Area in detail.

All of Shelby County Tennessee is the Pest Management Area.

2. Are any of your activities (in this pest management area) for which you are requesting coverage under this NOI occurring on areas considered "federal facilities" as defined by the permit? ☐ Yes ☒ No

3. Mailing address and contact information of the pesticide applicator (or check here ☐ if same as provided in Section B):

a. Street: 2480 Central Ave

b. City: Memphis

c. State: TN

d. ZIP Code: 38104

e. Telephone: 901 324 5547

f. Fax: 901 324 9932

g. Contact Name: Ture Carlson

h. E-mail: ture.carlson@shelbycountyttn.gov

4. Pesticide Use Patterns to be included in this Pest Management Area (check all that apply):

a. ☒ Mosquito and Other Flying Insect Pest Control

c. ☐ Animal Pest Control

b. ☐ Weed and Algae Pest Control

d. ☐ Forest Canopy Pest Control

5. Receiving Waters (check one):

a. ☒ Coverage requested for all waters of the state within the Pest Management Area identified above.

b. ☐ Coverage requested specifically for the following waters of the state within the Pest Management Area identified above.

c. ☐ Coverage requested for all waters of the state within the Pest Management Area identified above except for:

6. Outstanding National Resource Waters (ONRWs)

Is coverage requested for discharge to a Outstanding National Resource Water(s) of the United States? ☐ Yes ☒ No
If yes, answer a and b:

a. Name of ONRWs: _____

b. Provide rationale for determination that pesticide discharge is necessary to protect water quality, the environment, and/or public health and that any such discharge will not degrade water quality or will degrade water quality only on a short-term or temporary basis:

7. Water Quality Impaired Waters

Operators are not eligible for coverage under this permit for any discharges from a pesticide application to waters of the state if the waters are identified as impaired by a substance which is either an active ingredient of the pesticide designated for use or is a product of degradation of such an active ingredient. See Part 1.1.2.1 of the permit. Check one:

a. ☒ Waters are NOT impaired by any substance which is either an active ingredient of a pesticide to be discharged or a product of degradation of such an active ingredient

b. ☐ Waters are on a current state list as being impaired by a substance which is either an active ingredient of a pesticide to be discharged or a product of degradation of such an active ingredient; however, evidence is attached documenting that the waters are no longer impaired.

RECEIVED

MAY 26 2012

Division Of Water
Pollution Control

D. Certification

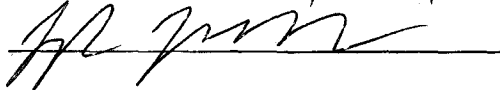
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. On the basis of my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. A false statement is subject to the penalties of perjury.

Printed Name: Tyler. Zerwekh

Title: Administrator, Shelby County Health Department, ^{Env. Health} Services Bureau

E-Mail: Tyler.Zerwekh@shelbycountyttn.gov

Signature/Responsible
Official:



Date: 05 22 2012

NOI Preparer (Complete if NOI was prepared by someone other than the certifier)

Preparer Name: Ture Carlson

Organization: Shelby County Health Department Vector Control Section

Phone: 901 324 5547

Date: 05 16 2012

E-Mail: ture.carlson@shelbycountyttn.gov

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

Pesticide Discharge Management Plan

for:

Shelby County Tennessee
Mosquito Control for Shelby County
Memphis, TN 38103

Decision-maker(s):

Shelby County
Dr. Tyler Zerwekh
814 Jefferson Ave.
Memphis, TN 38105
901-222-9079
901-222-9049

PDMP Contact(s):

Shelby County Health Department Vector Control Section
Ture Carlson
2480 Central Ave.
Memphis, TN 38104
901-324-5547
901-324-9932

PMPD Preparation Date:

May 16, 2012

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

Contents

SECTION 1: Operator Information	1
SECTION 2: PDMP Team	1
SECTION 3: Problem Identification	2
3.1 Pest Problem Description.....	2
3.2 Action Threshold(s)	4
3.3 General Location Map	5
3.4 Water Quality Standards	5
SECTION 4: Pest Management Options Evaluation	5
SECTION 5: Response Procedures	7
5.1 Spill Response Procedures	7
5.2 Adverse Incident Response Procedures	9
5.2.1 Responding to an Adverse Incident	9
5.2.2 Notification of an Adverse Incident.....	9
SECTION 6: Documentation to Support Eligibility Considerations Under Other Federal Laws.....	12
SECTION 7: Signature Requirements.....	14
SECTION 8: PDMP Plan Modifications	15
SECTION 9: PDMP Availability.....	16
Attachment A – General Location Map	17
Attachment B – Pesticide General Permit.....	24
Attachment C – NOI and Acknowledgement Letter from TDEC	25
Attachment D – Subcontractor Certifications/Agreements Template	26
Attachment E – Delegation of Authority Form Template	27
Attachment F – Annual Reports and Other Record Keeping	28

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

SECTION 1: Operator Information

1. A brief description of the Pest Management Area.
Shelby County Tennessee
2. Pesticide Use Patterns for this Pest Management Area that triggers the requirement to develop a Pesticide Discharge Management Plan.
 - a. ☒ Mosquitoes and Other Flying Insect Pests
 - b. ☐ Weeds and Algae
 - c. ☐ Animal Pests
 - d. ☐ Forest Canopy Pests
3. Operator Type:
 - a. ☐ Federal Government
 - b. ☐ State Government
 - c. ☒ Local Government
 - d. ☐ Mosquito control district (or similar)
 - e. ☐ Irrigation control district (or similar)
 - f. ☐ Weed control district (or similar)
 - g. ☐ Other: If other, provide brief description of type of Operator:

SECTION 2: PDMP Team

1. Decision-maker:
Company or Organization Name: Shelby County Health Department
Name: Dr. Tyler Zerwekh
Address: 814 Jefferson Ave.
City, State, Zip Code: Memphis, TN 38105
Telephone Number: 901-222-9079
Email address: tyler.zerwekh@shelbycountyttn.gov
Fax number: 901-222-9049
Area of Control (if more than one Operator at site): Shelby County Tennessee

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

2. PDMP Contact:
Company or Organization Name: Shelby County Health Department Vector Control Section
Name: Ture Carlson
Address: 2480 Central Ave.
City, State, Zip Code: Memphis, TN 38014
Telephone Number: 901-324-5547
Email address: ture.carlson@shelbycountyttn.gov
Fax number: 901-324-9932
Area of Control: Shelby County Tennessee

3. This PDMP was Prepared by:

Company or Organization Name: Shelby County Health Department Vector Control Section

Name: Ture Carlson

Address: 2480 Central Ave.

City, State, Zip Code: Memphis, TN 38104

Telephone Number: 901-324-5547

Email address: ture.carlson@shelbycountyttn.gov

4. Team members and their responsibilities.

Persons responsible for managing pests

- Daniel Sprenger / Manager
- Ture Carlson / Entomologist

Person responsible for developing and revising PDMP

- Ture Carlson / Entomologist

Persons responsible for developing, revising, and implementing corrective actions.

- Daniel Sprenger / Manager
- Ture Carlson / Entomologist
- Stanley Howell / Supervisor

Persons responsible for overseeing pesticide applications

- Daniel Sprenger / Manager
- Ture Carlson / Entomologist
- Stanley Howell / Supervisor
- Fredrick Mack / Foreman
- Roy Washington / Foreman

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

SECTION 3: Problem Identification

3.1 *Pest Problem Description*

1. A brief description and summary of the pest problem.

Shelby County is located in the Southwest corner of Tennessee. It is bordered by the Mississippi river to the west, the State of Mississippi to the south, Fayette County to the east, and Tipton County to the north. Shelby County has a total area of 501,760 acres of which 483, 200 acres is land. Shelby County has a population around 927,000. The county has 48 species of mosquitoes (Darsie & Ward, 2004) however Shelby County Vector Control primarily performs surveillance and control, when necessary, for 15 species. The source of mosquito populations is water that is either stagnant or very slow moving.

- I. *Aedes aegypti* (Yellow Fever Mosquito): This is a species found breeding in containers and tires. It is a less common mosquito but has the potential to vector many diseases. It prefers to take blood meals from human and when found it will be near homes. It is an early morning and late afternoon feeder.
- II. *Aedes albopictus* (Asian Tiger Mosquito): This species is a container breeding mosquito, and is commonly associated with the more urbanized areas in the county. However, it can also be an abundant species in the more rural regions of the county, especially in the vicinity of trash piles or tire dumps. It is a fierce daytime biter and a major nuisance mosquito within our area.
- III. *Aedes vexans* (Floodwater Mosquito): This is a common mosquito that breeds in any transient water and the adult has the potential to fly up to 5 miles. It is generally encountered in the spring, but can be found at other times of the year as well. A very important nuisance species not only in Shelby County but most of the U.S. as well. This mosquito is most commonly linked to the transmission of dog heartworm.
- IV. *Anopheles pseudopunctipennis*: Mainly a nuisance species in Shelby County it is usually found breeding in sun exposed water containing green algae or aquatic vegetation. It will typically be found taking blood meals in the evening. In other parts of the world this mosquito has been shown to transmit malaria which shows its potential as a vector mosquito.
- V. *Anopheles punctipennis* (Woodland Malaria Mosquito): This species is a nuisance species that prefers to breed in cool clear water in slow moving streams, and temporary pools but has also been found in containers. It is typically found taking blood meals right around dusk. This mosquito also has the ability to transmit malaria.
- VI. *Anopheles quadrimaculatus* (Common Malaria Mosquito): Currently this mosquito is a nuisance mosquito but it used to be the most important vector of malaria in United States. Breeding usually occurs in permanent pools, ponds, and swamps typically with floating vegetation and debris. Generally not active during the day it will start host seeking around dawn and dusk.
- VII. *Culex pipiens* (Northern House Mosquito): This species is a major vector of several pathogens including West Nile Virus (WNV), and St. Louis encephalitis. Larvae are found in any standing water with high organic content which may include containers, ditches, pools, and ground depressions. Adults are most active around dusk.
- VIII. *Culex quinquefasciatus* (Southern House Mosquito): This species is also a major vector of several pathogens including West Nile Virus, and St. Louis encephalitis. It has characteristics similar to the Northern House Mosquito.
- IX. *Culex restuans*: This is an early season mosquito that precedes *Culex quinquefasciatus* / *pipiens* in our area. Larval habitats for this species typically include a variety of semi-permanent waterways, including roadside ditches and woodland depressions and pools. It has been reported to carry WNV, and may be an important vector in the initial presence of this virus in bird populations as birds appear to be its primary blood hosts.
- X. *Psorophora columbiae*: This mosquito is often associated with flooded open grassy areas. It is a strong flyer that prefers feeding on mammals, and can be a serious nuisance mosquito during the summer and fall.

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

- XI. *Psorophora ciliata* (Gallinipper): This large mosquito occurs in small numbers but can contribute to the total number of nuisance mosquitoes in an area. Larvae are found in temporary ground pools in fields and ditches. The adults will take a blood meal whenever they are disturbed.
- XII. *Psorophora howardii*: This is another mosquito that is found in small numbers but can contribute to the total number of nuisance mosquitoes in an area. The larvae can be found in temporary rain pools and drainage areas.
- XIII. *Psorophora ferox* (White Footed Mosquito): This is an aggressive mosquito that will usually take a blood meal during the day. Most commonly breeds in ground pools in wooded areas but can be found in ground pools in grassy fields as well. It prefers to feed on mammals making it a nuisance, but it is not known to transmit any diseases.
- XIV. *Ochlerotatus canadensis* (Woodland Pool Mosquito): This mosquito is almost exclusively found in the early spring and is most likely to be the first mosquito present each year. Larvae are found in temporary woodland pools and earthen ditches. It is sometimes found in large numbers in shaded wooded areas and can be a nuisance because of its indiscriminate feeding.
- XV. *Ochlerotatus triseriatus* (Eastern Tree Hole Mosquito): This mosquito is found mainly in and near wooded areas because larvae develop in tree holes. It is a possible nuisance in Shelby County but in parts of Tennessee it can transmit La Crosse Virus.

3.2 Action Threshold(s)

1. Summary of the action threshold(s).

The mosquito species that are monitored are divided into two larger categories. One category is nuisance mosquitoes. These mosquitoes are known to bite people and are unlikely to spread disease, but may cause allergic reactions. Populations of these species may become so high that people sometimes alter their outdoor activities in order to avoid them. The second category is vector mosquitoes. These mosquitoes have the ability to transmit disease to people or may be involved in maintenance of the disease cycle. Appropriate action thresholds need to be established to ensure a high quality of life as well as minimize the risk for mosquito-borne diseases for the residents of and visitors to Shelby County through reducing biting activity.

Adulticiding Action Threshold: A number of surveillance methods are used in order to estimate adult mosquito population. One method is the use of New Jersey Light Traps, to monitor nuisance mosquitoes. Another is Gravid Traps, used to monitor vector mosquitoes (i.e. *Culex* species). A third method is through landing rates, used to monitor nuisance mosquitoes. Action thresholds are dependent on a number of factors like mosquito species present, location of monitoring site, proximity to human populations, and density of human population. The action threshold for nuisance mosquitoes is 25 mosquitoes per trap per night or if landing rates are used it will be 1 mosquito per minute. The action threshold for vector mosquitoes is also based on the same factors as nuisance mosquitoes but also whether or not the vector mosquitoes have tested positively for a disease pathogen that can be a threat to human health. When disease pathogens are detected the action threshold will be 1 mosquito per trap per night and when disease pathogens are not detected then the action threshold will be not lower than 50 mosquitoes per trap per night.

RECEIVED

MAY 23 2012

Division Of Water
Pollution Control

Larviciding Action Threshold: A standard 12 oz dipper will be used to check water for the presence or absence of larval mosquitoes. The action threshold for mosquito larvae and pupae will be an average of 1 mosquito per dip per site for all larval habitats.

3.3 General Location Map

General location maps for Shelby County are found in Attachment A.

3.4 Water Quality Standards

A brief summary of Tier 3 waters and waters impaired for pesticides.

No waterway in Shelby County is identified as impaired by any pesticide or it's degradate that is currently being used by Shelby County Health Department Division of Vector Control. The waterways are located on the general location maps included in Attachment A. Shelby County Tennessee has no listed Outstanding Natural Resource Waterways.

RECEIVED

MAY 25 2012

SN Division Of Water
Pollution Control

SECTION 4: Pest Management Options Evaluation

1. A brief description of the pest management options.

Control Measure Description.

- a. A description of the control measures to demonstrate how the operators specifically plan to meet the applicable technology-based or water quality-based effluent limitations.

- i. No action or at least delayed action may be taken by Shelby County at times when a major portion of the county has been inundated with water. When a county wide flooding event takes place it is generally more economical and environmentally friendly to allow mosquito larvae to emerge and treat for adults at a later time if necessary. This is because not all larval habitats can be treated in a timely manner to prevent adult emergence, and adult mosquitoes will migrate into our service area from the surrounding regions that have no or reduced mosquito control resources. Conversely, no action may also be taken when sites containing larvae are shallow, and extended weather forecasts indicate dry conditions. Such situations allow larval habitat to dry before mosquitoes can complete their aquatic life stages, and no adults result. There are several reasons why no action may be taken. No access to larval habitat, typically due to gates or other obstructions. The mosquito fauna in a larval habitat may consist of species that are not a nuisance to mammals or vectors of disease. Lack of personnel to inspect and treat breeding habitats. These are just some examples and other situations will arise that can lead to no action being taken.
- ii. Prevention, will include the use of mechanical/physical and cultural methods. These methods are very similar in nature and share many characteristics. Actions taken using these methods can be as basic as simply emptying water from containers or

as complex as repairing broken water lines and sewer lines which often require the involvement of other municipal or county departments, such as Public Works. Public education programming at area events as well as press releases allow Shelby County staff the opportunity to recommend ways that residents can assist in the prevention of mosquito problems by removing containers and objects from their yards that provide larval habitat, and to be mindful that birdbaths and gutters could serve as mosquito habitat when not properly maintained.

- iii. Mechanical / physical methods in which the habitat is physically altered to remove or reduce the amount of available larval habitat is a method of control Shelby County commonly incorporates in our service area. Repairs to sewer and water systems are done by local municipalities, Public Works, or Roads Departments. Also TDEC oversees any changes to stream bottoms and bank stabilizations through their ARAP program. The removal and proper disposal of tires and other water-containing objects is commonly performed by Shelby County Vector Control.
- iv. Cultural methods like the previous two methods modify larval habitat to prevent favorable conditions for mosquitoes to complete their aquatic development. Physical manipulation of environments such as removing blockages in ditches that serve as barriers to water flow and the access of natural predators of mosquitoes. This is sometimes a quick and effective means to resolve problems on a localized level.
- v. Biological control agents. Shelby County uses *Gambusia affinis* for the control of larval stages of mosquitoes. *Gambusia* will be introduced into areas that can sustain fish. These fish are also available at our office for homeowners to pick up for free and introduce into potential breeding sites around their homes.
- vi. Pesticides often are any abatement agency's last choice of control measures. These products are applied as directed by their respective label, and all equipment used in this process is closely monitored and calibrated by staff.

2. A summary of Pest Management Measures that will be or are implemented to meet the technology-based effluent limitations.

Operators must consider impact to non-target organisms, impact to water quality, feasibility, and cost effectiveness when evaluating and selecting the most efficient and effective means of pest management to minimize pesticide discharge to waters of the U.S. The following pest management measures are being used to meet technology-based effluent limitations. i) no action, ii) prevention, iii) mechanical / physical methods, iv) cultural methods, and v) biological control. The species present, stage of development, age of larvae, habitat, water conditions, and environmental conditions will be taken into account when deciding which pesticide and what application rate will be used.

RECEIVED

MAY 25 2012

A Division Of Water
Pollution Control

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

SECTION 5: Response Procedures

5.1 *Spill Response Procedures*

Introduction

The control of disease vectors can involve the potential use of pesticides in order to protect public health and quality of life. The spill response plan will address the storage, transportation, and disposal of those pesticides. The procedures for responding to a spill or accidental release of those pesticides into the environment will also be included in the spill response plan. Shelby County Health Department Vector Control Section shall train all employees involved in transporting or applying pesticides on spill containment, notification and response that could impact the waterways of the state. This training shall be done annually and an attendance sheet will be maintained indicated the employees present and the date they received training. Key personal involved in the storage, transporting, handling, dispensing, and disposal of pesticides will receive annual training in Hazardous Materials Operations / OSHA Tier II as available.

Composition of pesticides

There are two main types of insecticides used for vector control by Shelby County, mosquito adulticides and mosquito larvicides.

Presently two active ingredients are used in the control of adult mosquitoes, permethrin and resmethrin. Both of these active ingredients are pyrethroids which are synthetic chemicals based upon the molecular structure of a natural compound called pyrethrum. Permethrin is the active ingredient in a variety of Biomist products and resmethrin is the active ingredient in Scourge. These adulticides may also contain piperonyl butoxide which is a chemical that increases the insecticidal properties of pyrethroids. Pyrethroids used for adult mosquito control also contain inert ingredients which are usually organic solvent called petroleum distillates.

There are a number of active ingredients available for the control of mosquito larvae. The active ingredients being used at present are aliphatic petroleum hydrocarbons, poly (oxy-1, 2-ethanediyl), α -(C16-20 branched and linear alkyl)- ω -hydroxy, *Bacillus thuringiensis israelensis*, *Bacillus sphaericus*, and temephos. Aliphatic petroleum hydrocarbon is highly refined petroleum used to coat the water surface which prevents mosquito larvae from breathing at the water surface. Poly (oxy-1,2-ethanediyl), α -(C16-20 branched and linear alkyl)- ω -hydroxy is a monomolecular film (MMF) that breaks the surface tension of water which stops mosquito larvae from being able to breathe and stops adult mosquitoes from being able to land on the water surface to lay eggs. *Bacillus thuringiensis israelensis* and *Bacillus sphaericus* are both bacteria that mosquito larvae ingest and then disrupt the larvae digestive system. Temephos is an organophosphate that acts upon the nervous system and paralyzes the larvae. Use of Temephos will be phased out when the current supply is exhausted.

Handling of materials

All pesticides will be handled as described by the label and the material safety data sheet. Compliance with Occupational Safety and Health Association (OSHA), Tennessee Department of Environment and Conservation (TDEC), Tennessee Department of Agriculture (TDA), and Tennessee Department of Transportation (TDOT) laws and regulations will be met. Employees will receive training on the potential hazards of all pesticides used by Shelby County Vector Control as well as training on an annual basis in use of appropriate personal protective equipment, and procedures designed to prevent

exposure. Records of who received training and when they received it will be included on the annual report. Equipment used to apply insecticides will be calibrated annually and as often as necessary. Also equipment will be regularly checked for leaks and other damage.

- Storage

All storage will be maintained in accordance with manufactures' recommendations. The storage areas are well ventilated, secure with limited access, and protected from ignition sources. All buildings containing insecticides are labeled with proper NFPA signage.

- Transportation

Transportation of insecticides, after they are delivered by the manufacturer, will be limited to what will be needed for that days work in order to limit the amount of insecticides carried on vehicles. Insecticides will either be held in original containers or in containers that are properly labeled and will not be stored in the cab of the vehicle. Also vehicles used by Shelby County Vector Control will be identified as such and will contain a label and MSDS for every insecticide found on the vehicle.

- Waste Disposal

Disposal of wastes that include insecticides will be done in accordance with the label of the insecticides. Waste generated from a spill or accidental release will be placed in a waste chemical container and either taken to a suitable disposal facility or handed over to a licensed hazardous material removal company. Empty storage containers will either be returned to the manufacturer or cleaned and disposed of according to the label.

Potential Spills of Pesticides

When a spill or accidental release is first identified, the employee will notify their immediate supervisor. The immediate supervisor will then notify Stanley Howell (Supervisor B), Ture Carlson (Entomologist), or Dr. Daniel Sprenger (Vector Control Manager) if not initially notified. For all spills, the affected area will be isolated to control access and remove ignition sources. Cleanup personnel will wear appropriate personal protective equipment as described on the product label and MSDS.

Spill procedure for impervious surfaces

1. Stop the leak if possible without coming into contact with the pesticide.
2. Dike ahead of the spill using barriers (i.e. socks or other absorbent material) to prevent entry of the pesticide into waterways, sewers, and confined areas.
3. If possible, collect the material. Use siphons and pumps with liquids and scoops with dry products.
4. Absorb the pesticide with an inert absorbent material.
5. Sweep up absorbent material and place in a chemical waste container for proper disposal.
6. The area will be rinsed with soapy water (soda lye for organophosphates) and the rinsate will be absorbed using the same inert absorbent which will then be swept up and placed in the chemical waste container.

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

7. The chemical waste material will be properly disposed of at a suitable facility or by a hazardous material company.

Spills on soil the affected area will be dug up and impacted soil will be placed in the chemical waste container for proper disposal.

A spill or accidental release over the reportable quantity established in CERCLA will require notification to the National Response Center (phone number 1-800-424-8802), State Emergency Operations Center (phone number 1-800-262-3300), and the Local Emergency Planning Committee (Nick Ridge 6478 Eastbrier Dr. Bartlett, TN 38135 phone number 901-734-5022).

The following table (Table 1) is the list of active ingredients found in pesticides currently being used by Shelby County Division of Vector Control. Shelby County does not meet the facility requirements for EPCRA section 313.

Table 1: Reportable quantities for EPA List of Lists, CERCLA, EPCRA, and CAA

Name	CAS Number	Section 302 (EHS) TPQ	Section 304 EHS RQ	CERCLA RQ	Section 313	RCRA Code	CAA 112(r) TQ
temephos	3383-96-8				313		
piperonyl butoxide	51-03-6				313		
permethrin	52645-53-1				313		
resmethrin	10453-86-8				313		
Bacillus thuringiensis israelensis	68038-71-1						
Bacillus sphaericus	143447-72-7						
aliphatic petroleum hydrocarbons	64742-53-6						
Poly (oxy-1,2-ethanediyl), α -(C16-20 branched and linear alkyl)- ω -hydroxy	881022-11-3						
Ethylene Oxide (in MMF 3ppm)	75-21-8	1,000	10	10	313	U115	10,000
1,4 Diethylene Oxide (in MMF 33ppm)	123-91-1			100	313	U108	
Petroleum Distillates	64742-55-8						

RECEIVED

MAY 25 2012

5.2 Adverse Incident Response Procedures

5.2.1 Responding to an Adverse Incident

Adverse Incidents will be responded to as soon as they occur and/or Shelby County Division of Vector Control is made aware of it. As soon as an employee is aware of an event they will record date, time, date when first observed, person who observed it, their address and phone number, location of the incident, and description of incident. The adverse incident will be investigated immediately. Documentation will be taken while on site including photos, measuring or estimating the size of area, what or who was affected by the insecticide, and if necessary samples may be taken. The Thirty (30)-Day Adverse Incident Written Report for the Pesticide General Permit (PGP) will be filled out and submitted to TDEC. Other agencies may also need to be notified and will be contacted as necessary. In the event that an adverse incident involves a person becoming sick they will be taken to an emergency room, if needed, along with a label and MSDS of the insecticide believed to have caused the incident.

5.2.2 Notification of an Adverse Incident

Any employee who becomes aware of an adverse incident will notify Ture Carlson (Entomologist), Stanley Howell (Supervisor), or Dr. Daniel Sprenger (Manager of Vector Control) immediately. Depending

on the severity of the incident other agencies may be contacted immediately in order to assess the situation as well. 911 may have to be called if a person(s) has been exposed and needs immediate medical attention. Local Emergency Planning Committee may need to be contacted as well, contact information included below. TDEC will also be notified within 24 hrs of Vector Control becoming aware of the incident. The nearest Environmental Field Office is located in Shelby County and will be the first TDEC office contacted. If an accidental release occurs and it is required Tennessee Emergency Management Agency (TEMA) 1-800-262-3300 and the National Response Center (NRC) 1-800-424-8802 may also have to be contacted.

Permitting Agency

TDEC Division of Water Pollution Control
6th floor, L & C Annex
401 Church St.
Nashville, TN 37243
(615) 532-0625

TDEC EFO

8383 Wolf Lake Dr.
Bartlett, TN 38133
(901) 371-3000

Emergency Contact

Local Emergency Planning Committee
P.O. Box 111450
Memphis, TN. 38111
901-320-8565

RECEIVED
MAY 25 2012
Division Of Water
Pollution Control

Hospitals found in Shelby County with emergency care facilities. Emergency Phone Number 911

Methodist North Hospital

3960 New Covington Pike, Memphis, TN

Regional Medical Ctr

877 Jefferson Ave, Memphis, TN

St Francis Hospital

5959 Park Ave, Memphis, TN

Baptist Memorial Health Care

6019 Walnut Grove Rd, Memphis, TN

Le Bonheur Children's Med Ctr

50 N Dunlap St, Memphis, TN

St Francis Hospital

2986 Kate Bond Rd, Memphis, TN

Baptist Memorial Hospital

6225 Humphreys Blvd, Memphis, TN

Methodist Healthcare

1265 Union Ave, Memphis, TN

Baptist Memorial Hospital East

6019 Walnut Grove Rd, Memphis, TN

Delta Medical Ctr

3000 Getwell Rd, Memphis, TN

Methodist Le Bonheur Germantown

7691 Poplar Ave, Germantown, TN

Hazardous Chemical Responder

Safety-Kleen Systems

3536 Fite Rd.

Millington, TN 38053

(901) 357-3600

RECEIVED
MAY 25 2012
DIVISION OF WATER
Pollution Control

SECTION 6: Documentation to Support Eligibility Considerations under Other Federal Laws

A list of Threatened and Endangered Animals for Shelby County

Invertebrate Animals

Lampsilis siliquoidea, Fatmucket: Slackwater with mud subst; Wolf R (Miss R trib); west TN; may occur at Reelfoot Lk; also rept Drakes Ck (Cumb R), Sumner Co.

Obovaria jacksoniana, Southern Hickorynut: Rivers with medium-sized gravel substrates and low-mod current; Wolf & Hatchie rivers; Mississippi River watershed; west Tennessee.

Webbhelix multilineata, Striped Whitelip: Low wet habitats, marshes, floodplains, meadows; lake margins; under leaf litter or drift; Mississippi River floodplain.

Vascular Plants

Acmella oppositifolia, Creeping Spot-flower: Swamps And Wetlands

Heteranthera multiflora, Multiflowered Mud-plantain: Shallow Water, Mud Flats

Hottonia inflata, Featherfoil: Wet Sloughs And Ditches

Hydrastis Canadensis, Goldenseal: Rich Woods

Iris fulva, Copper Iris: Bottomlands

Ophioglossum crotalophoroides, Bulbous Adder's-tongue: Meadows And Grassy Slopes

Panax quinquefolius, American Ginseng: Rich Woods

Phacelia ranunculacea, Blue Scorpion-weed: Alluvial Woods

Prenanthes crepidinea, Nodding Rattlesnake-root: Rich Bottomlands

Schisandra glabra, Red Starvine: Rich Mesic Woods, Bluffs

Silene ovate, Ovate Catchfly: Open Oak Woods

Symphotrichum praealtum, Willow Aster: Moist Prairies And Marshes

Ulmus crassifolia, Cedar Elm: Swamps

Vertebrate Animals

Ammocrypta beani, Naked Sand Darter: Shifting sand bottoms & sandy runs; Hatchie River & larger tribs.

Chondestes grammacus, Lark Sparrow: Open habitats with scattered bushes and trees, prairie, cultivated areas, fields with bushy borders; ground nester.

Cycleptus elongates, Blue Sucker: Swift waters over firm substrates in big rivers.

Dendroica cerulean, Cerulean Warbler: Mature deciduous forest, particularly in floodplains or mesic conditions.

RECEIVED

MAY 25 2012

SH Division Of Water
Pollution Control

Haliaeetus leucocephalus, Bald Eagle: Areas close to large bodies of water; roosts in sheltered sites in winter; communal roost sites common.

Hyla gratiosa, Barking Treefrog: Low wet woods and swamps esp. with ephemeral ponds.

Ictinia mississippiensis, Mississippi Kite: Undisturbed stands of lowland and floodplain forests and along major rivers.

Limnothlypis swainsonii, Swainson's Warbler: Mature, rich, damp, deciduous floodplain and swamp forests.

Neotoma floridana illinoensis, Eastern Woodrat: Forested areas, caves & outcrops; west Tennessee generally.

Noturus gladiator, Piebald Madtom: Large creeks & rivers in moderate-swift currents with clean sand or gravel substrates; Mississippi River tributaries.

Pituophis melanoleucus Melanoleucus, Northern Pinesnake: Well-drained sandy soils in pine/pine-oak woods; dry mountain ridges; E portions of west TN, E to lower elev of the Appalachians.

Sorex longirostris, Southeastern Shrew: Various habitats including wet meadows, damp woods, and uplands; statewide.

Sterna antillarum athalassos, Interior Least Tern: Mississippi River sand bars & islands, dikes.

Thryomanes bewickii, Bewick's Wren: Brushy areas, thickets and scrub in open country, open and riparian woodland.

Tyto alba, Barn Owl: Open and partly open country, often around human habitation; farms.

Vireo bellii, Bell's Vireo: Thickets adjacent to water, bottomlands; west Tennessee and one confirmed location in Western Highland Rim.

There are no insect species listed above so several active ingredients, *Bacillus thuringiensis israelensis* and *Bacillus sphaericus*, will have no effect to any species on the list. Also none of the active ingredients will impact plants on the list. Permethrin, resmethrin, and piperonyl butoxide are only used as mosquito adulticides and are not applied directly to waterways which will not allow these active ingredients to impact fish and mollusks. Also these active ingredients are applied at such low levels that they are not a threat to mammals, reptiles, or amphibians. Temephos is only applied to closed systems, i.e. electrical vaults, that are secured and do not drain to waterways. Aliphatic petroleum hydrocarbons, and poly (oxy-1, 2-ethanediyl), α -(C16-20 *branched* and linear alkyl)- ω -hydroxy are only used in temporary water pools when mosquito pupae are present or in situations where the water is highly polluted. In these situations few other species are present and in past experience no species listed above have been observed in these areas.

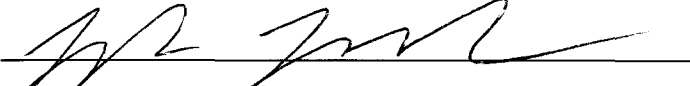
RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

SECTION 7: Signature Requirements

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the application of pesticides, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Tyler Zerwekh Title: Administrator, EHS Bureau
Signature:  Date: 5/22/12
Shelby County Health Dept.

Repeat as needed for multiple Decision-makers at the site.

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

SECTION 8: PDMP Plan Modifications

Changes to the PDMP will be made before the next pesticide application that results in a discharge, if practicable, or if not, no later than 90 days after any change in pesticide application activities. Shelby County Vector Control will review and, as necessary, revise the evaluation and selection of Pest Management Measures for the following situations:

- a. An unauthorized release or discharge associated with the application of pesticides (e.g. spill, leak, or discharge not authorized by this or another NPDES permit) occurs.
- b. Operators become aware, or the division concludes, that Pest Management Measures are not adequate/sufficient for the discharge to meet applicable water quality standards.
- c. Any monitoring activities indicate failure to meet applicable technology-based effluent limitations.
- d. An inspection or evaluation of activities by an the division official, federal or local entity, reveals that modifications to the Pest Management Measures are necessary to meet the effluent limitations in this permit.
- e. Any Operator observes or is otherwise made aware of an adverse incident as defined in Appendix A.

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

SECTION 9: PDMP Availability

Copies of the PDMP as well as annual reports, maps, adverse incident documentation, copy of the NPDES PGP, as well as all other documents will be kept at Shelby County Vector Control 2480 Central Ave. Memphis, TN. 38104. This information as well as copies will be available upon request.

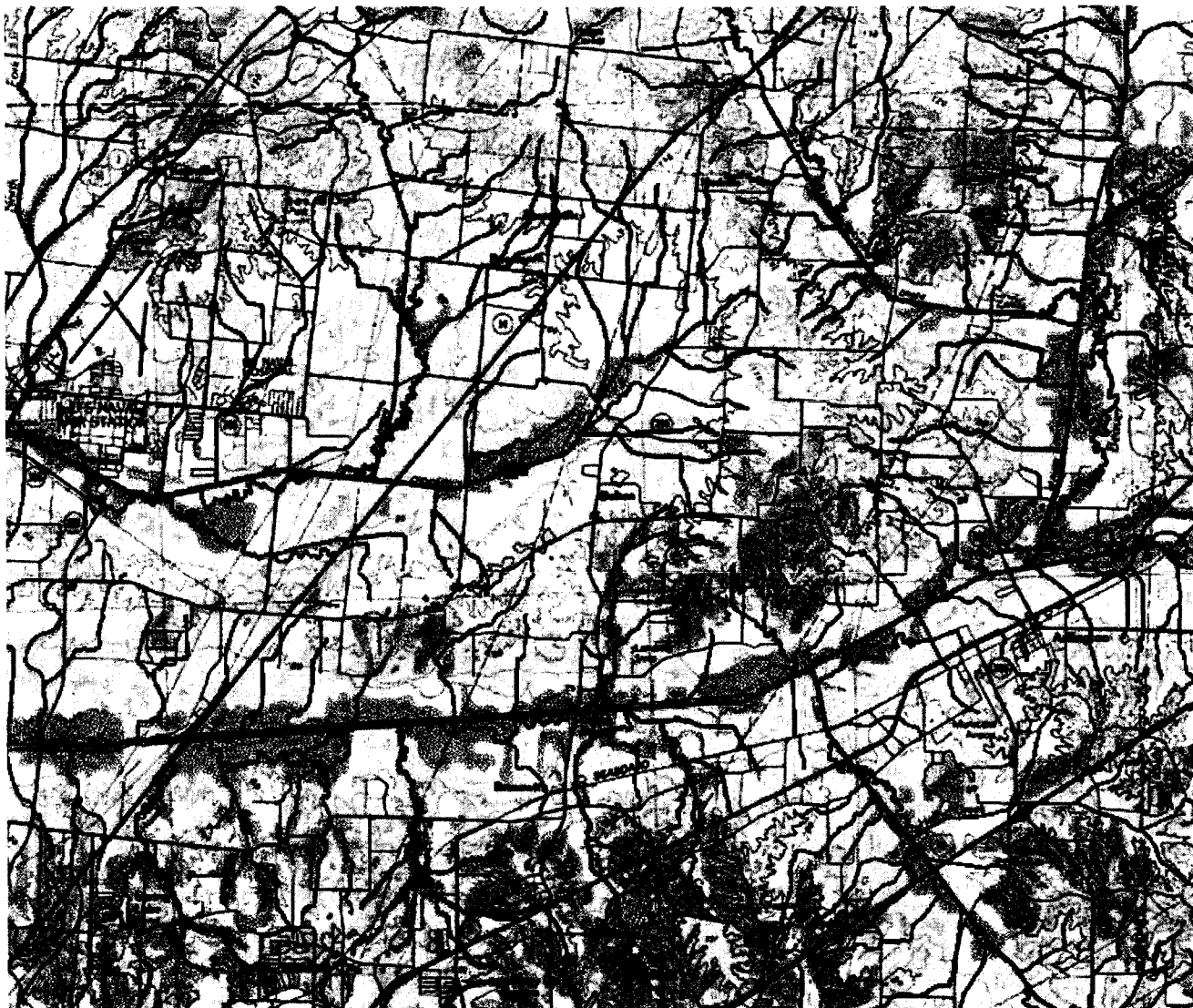
RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

Attachment A – General Location Map

Northeast Shelby County

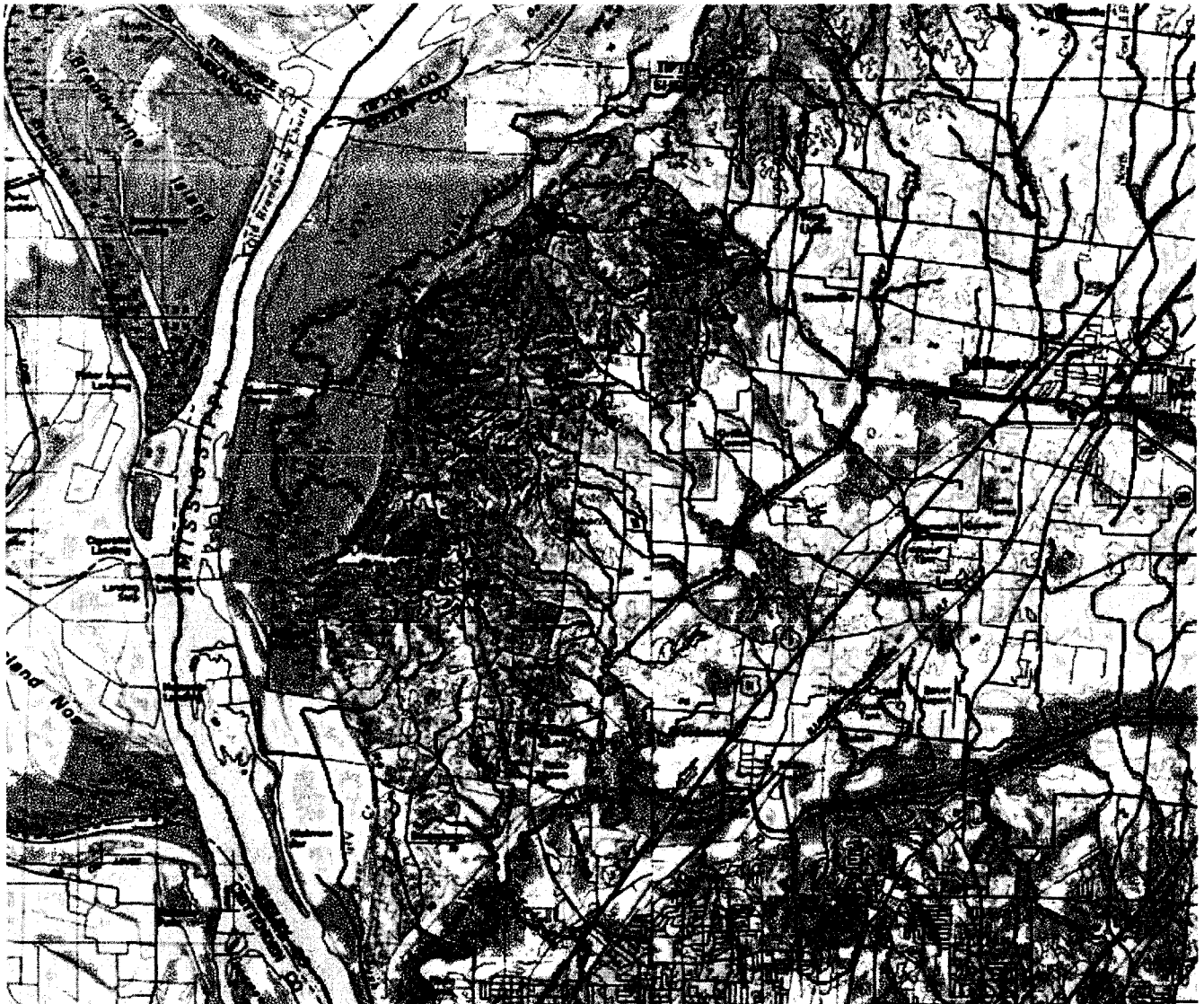


RECEIVED

MAY 8 5 2012

Division of Water
Pollution Control

Northwest Shelby County



RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

East Central Shelby County



RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

West Central Shelby County

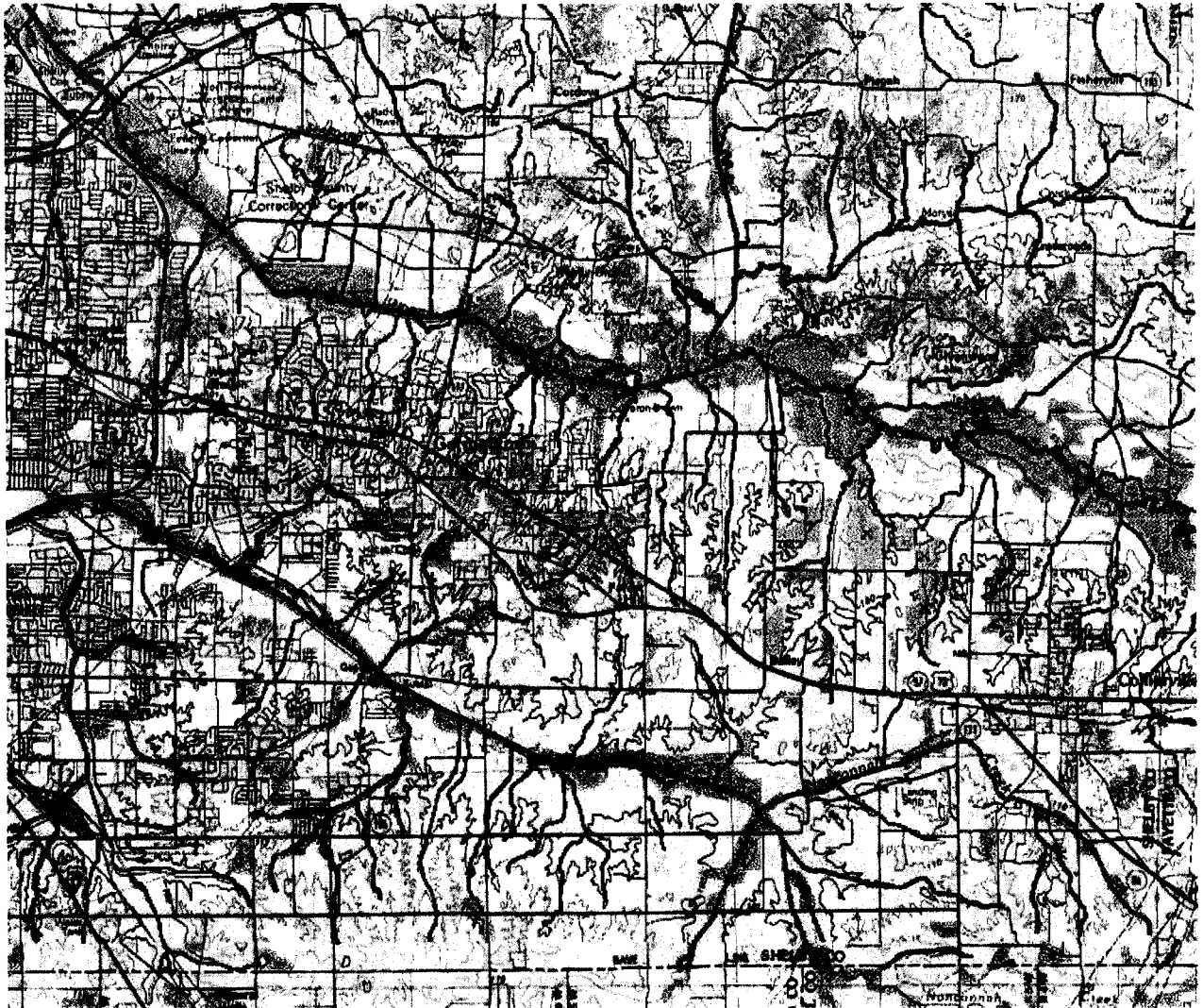


RECEIVED

MAY 25 2012

Division of Water
Pollution Control

Southeast Shelby County



RECEIVED

MAY 25 2012

DIVISION OF WATER
Pollution Control

South Central Shelby County



RECEIVED

MAY 8 3 2012

Division Of Water
Pollution Control

Southwest Shelby County



RECEIVED

MAY 25 2012

Division of Water
Pollution Control

Attachment B – Pesticide General Permit

When the NPDES PGP is approved by TDEC a copy will be included in Attachment B.

RECEIVED

MAY 25 2012

Division of Water
Pollution Control

Attachment C – NOI and Acknowledgement Letter from TDEC

When the NOI is submitted and acknowledgement letter is received from TDEC both will be included in Attachment C.

RECEIVED

MAY 25 2012

Division of Water
Pollution Control

Attachment D – Subcontractor Certifications/Agreements Template

SUBCONTRACTOR CERTIFICATION PESTICIDE DISCHARGE MANAGEMENT PLAN

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

Project Number: _____

Project Name: _____

Decision-maker(s): _____

As a subcontractor, you are required to comply with the Pesticide Discharge Management Plan (PDMP) for any work that you perform for the above designated project. Any person or group who violates any condition of the PDMP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the PDMP. A copy of the PDMP is available for your review.

Each subcontractor engaged in pesticide activities in the pest management area that could impact Waters of the United States must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the PDMP for the above designated project.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of pesticide application service to be provided: _____

Signature: _____

Title: _____

Date: _____

Attachment E – Delegation of Authority Form

Delegation of Authority

I, Tyler Zerweck (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Pesticide General Permit, for the Shelby County, Tennessee project. The designee is authorized to sign any reports, other documents required by the permit.

<u>Ture Carlson, Entomologist</u>	(name of person or position)
<u>Shelby County Health Department</u>	(company)
<u>2480 Central Ave.</u>	(address)
<u>Memphis, TN 38104</u>	(city, state, zip)
<u>901-324-5547</u>	(phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix B, Subsection B.11.A of EPA's Pesticide General Permit (PGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix B, Subsection B.11.A.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the pest management area, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Tyler Zerweck

Company: Shelby County Health Dpt.

Title: Administrator

Signature: [Signature]

Date: 5/22/12

RECEIVED

MAY 25 2012

Division Of Water
Pollution Control

Attachment F – Annual Reports and Other Record Keeping

The following is a list of records you should keep at your site and available for inspectors to review:

- Copies of Annual Reports
- Records as required in PGP Part 7.4

Check your permit for additional details

RECEIVED
MAY 25 2012
Division Of Water
Pollution Control